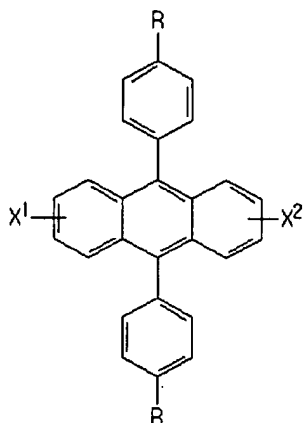


WHAT IS CLAIMED IS:

1. An anthracene compound represented by the following
formula(4):

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[Formula 4]

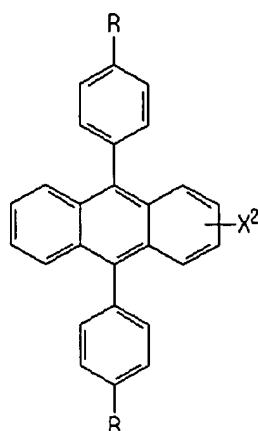


wherein R is an alkyl group having 1-8 carbon atoms, X¹
and X² are independently hydrogen or halogen.

10

2. The anthracene compound as set forth in claim 1,
represented by the following formula(5) corresponding to the
formula(4), wherein X¹ is hydrogen:

[Formula 5]

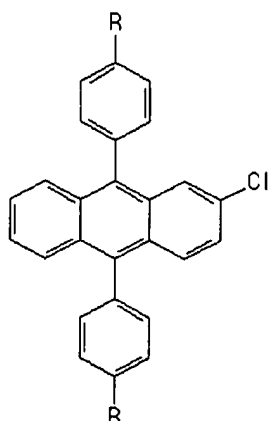


wherein R is an alkyl group having 1-8 carbon atoms, and X² is halogen.

5

3. The anthracene compound as set forth in claim 2, represented by the following formula(6) corresponding to the formula(5), wherein X² is Cl:

[Formula 6]



10

wherein R is an alkyl group having 1-8 carbon atoms

4. The anthracene compound as set forth in claim 3, wherein R of the formula(6) is 9,10-bis(4-methylphenyl)-2-

chloroanthracene, 9,10-bis(4-ethylphenyl)-2-chloroanthracene, 9,10-bis(4-propylphenyl)-2-chloroanthracene or 9,10-bis(4-*t*-butylphenyl)-2-chloroanthracene, which have 1-4 carbon atoms, respectively.

5

5. A preparation method of an anthracene compound comprising:

refluxing a compound of the following formula(11) with magnesium metal in an organic solvent and cooling the refluxed solution, thereby obtaining a compound of the following formula(12);

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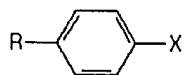
mixing the obtained compound of the formula(12) and anthraquinone of the following formula(13) in an organic solvent, refluxing the resulting solution, adding an aqueous acid solution to the resulting solution, extracting an organic phase, and distilling the extracted organic phase, thereby obtaining a brown solution of the following formula(14); and

15

reacting acetic acid and a catalyst with the brown solution, thereby obtaining a compound of the formula(4).

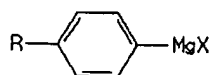
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[Formula 11]



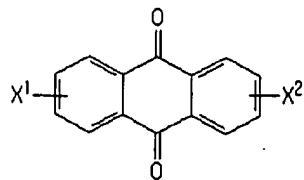
wherein R is an alkyl group having 1-8 carbon atoms, and X is halogen.

[Formula 12]



wherein R is an alkyl group having 1-8 carbon atoms, and
X is halogen.

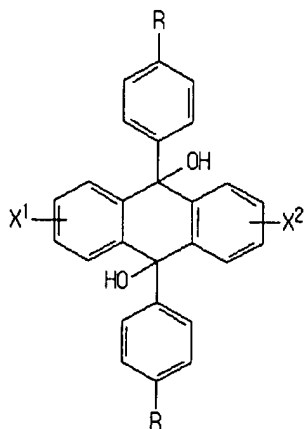
[Formula 13]



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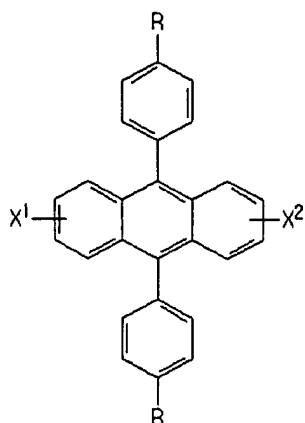
wherein X^1 and X^2 are independently hydrogen or halogen.

[Formula 14]



wherein R is an alkyl group having 1-8 carbon atoms, and
 X^1 and X^2 are independently hydrogen or halogen.

[Formula 4]



wherein R is an alkyl group having 1-8 carbon atoms, and X¹ and X² are independently hydrogen or halogen.

5 6. The preparation method as set forth in claim 5, wherein the aqueous acid solution is an aqueous hydrochloric acid solution.

10 7. The preparation method as set forth in claim 5, further comprising recrystallizing a resultant of the reaction of the acetic acid and the brown solution.

15 8. A chemiluminescent composition containing the anthracene compound of Claim 1.

 9. The chemiluminescent composition as set forth in Claim 8, wherein the anthracene compound is selected from the group consisting of 9,10-bis(4-methylphenyl)-2-chloroanthracene, 9,10-bis(4-ethylphenyl)-2-chloroanthracene,

9,10-bis(4-propylphenyl)-2-chloroanthracene and 9,10-bis(4-
butylphenyl)-2-chloroanthracene.

10. The chemiluminescent composition as set forth in
5 Claim 8, further comprising a solvent.

11. The chemiluminescent composition as set forth in
Claim 10, wherein the solvent is selected from the group
consisting of tertiary alcohols, dibutyl phthalate, butyl
10 benzoate, dimethyl phthalate and mixtures comprising at least
one of the foregoing.

12. The chemiluminescent composition as set forth in
Claim 8, further comprising an oxalate compound.

13. The chemiluminescent composition as set forth in
Claim 12, wherein the oxalate compound is bis(2,4,5-trichloro-
6-carbopentoxyphenyl)oxalate.

14. A chemiluminescent composition as set forth in claim
20 8, further comprising a peroxide-containing component.

15. The chemiluminescent composition as set forth in
Claim 14, wherein the peroxide-containing component contains a
25 solvent selected from the group consisting of tertiary

alcohols, dibutyl phthalate, butyl benzoate, dimethyl phthalate
and mixtures comprising at least one of the foregoing.

16. The chemiluminescent composition as set forth in
5 Claim 15, wherein the peroxide-containing component further
contains a catalyst.

17. The chemiluminescent composition as set forth in
Claim 16, wherein the catalyst is salicylate

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